

USING MARKETING STRATEGIES TO CLEAR PREJUDICES AND CHANGE ATTITUDES TOWARDS HEALTH TECHNOLOGY

Bachelor's Thesis
Riku Hurskainen
Aalto University School of Business
Marketing
Fall 2016

Author Riku Hurskainen

Title of thesis Using marketing strategies to clear prejudices and change attitudes towards health technology

Degree Bachelor's

Degree programme Marketing

Thesis advisor(s) Maria Del Rio Olivares

Year of approval 2016

Number of pages 34

Language English

Abstract

This thesis is a study of the common prejudices the health tech market faces and how to fight them with different means of modern marketing communications. The goal of improving the marketing strategies of this industry, is not only to create more profits to the companies and organizations, but to change the market's attitudes and prejudices. This study will focus on analysing the different negative attitudes people have and from where they emerge and the means of changing the way people think and perceive new technological health care products and services through the means of health care marketing strategies. This will be done by analysing the health care marketing itself and the common prejudices people have towards health technology. After this, the most effective solutions will be discussed. Finally, the conclusions with the known limitations and suggestions for further research are introduced.

Keywords Health Technology, Prejudices, Attitudes, Marketing

1. Contents

Abstract	1
1. Contents	2
2. Introduction.....	3
2.1. Aims and objectives.....	3
2.2. Framework and research question.....	5
3. Marketing in the health care industry	7
3.1. Perspectives and principles	7
3.2. Concrete usage	9
3.2.1. Functions of health care marketing communications	9
3.2.2. Channels of communicating and categories of marketing messages	11
3.2.3. Integrated Marketing Communications	12
4. Attitudes towards health tech innovations.....	15
4.1. Technology Acceptance Model (TAM)	15
4.2. Self-efficacy.....	17
4.3. Age	18
4.4 Low-income and Low-education groups	19
5. Marketing to change prejudices of the health tech industry	21
5.1. Channels	21
5.2. What to communicate?	22
6. Conclusions.....	26
6.1. Contribution.....	26
6.2. Limitations and Suggestions for future research	27
7. References.....	29

2. Introduction

2.1. Aims and objectives

In the modern world, everything needs marketing and health tech companies make no exception. While the economy and purchasing power keeps growing throughout the world, new companies keep rising all the time. It follows that health tech companies, with the help of modern technology and the need for people to take better care of their health, have started growing and multiplying (Lehoux et al. 2004, Herzlinger 2006). Technology has grown cheaper to use and more platforms emerge all the time. This is one of the reason, why many new health tech companies have been born in the past few years. The concept of “going to the hospital” has changed in today’s world, and it is not always necessary to go all the way to the doctor, if one can do what is necessary it at home. Diagnostics, monitoring, analyzing, coaching, therapy and many more things which demanded to go to a hospital and physically meet a doctor or intern yourself have changed. Sensors in the walls to monitor the elderly, wrist bands to check your sugar levels for diabetics, bed panels which monitor your sleep quality, huge diagnostic databases etc. are now becoming normal, everyday things.

Health technology has become a top export of high technology societies like Finland. In the last couple of years, Finland’s health tech industry has experienced massive growth and it is today the top technological export of the country, creates a profit of almost one billion euros and is in constant need of new employers (Teknologiateollisuus 2016, Karjalainen 2016, Tjeder 2015).

As Freeman and Engel (2007) state, many of innovations come from startups and the case is the same in the health tech industry. Therefore, it is important to provide these emerging new companies with the adequate research material on how to do effective marketing in their field and this study is a part of that.

Technology acceptance should be carefully linked to health-tech acceptance. Health-tech has many different and unique aspects compared to “ordinary” technology as the context is much more sensitive, when people are talking about health and wellbeing (Kay 1994). Peo-

ple take their health and wellbeing extremely serious, and for example the presence of a serious illness in the person itself or a family member is usually very delicate and hard to talk (Benzein et al. 2015). There's also the question of risen privacy and ethics in this field, since people are usually cautious to share their medical details while talking about for example electronic patient databases (Calnan et al. 2005).

Many new technologies have emerged to the market in a really fast pace, and this might have been quite overwhelming to the consumers. The health care industry is changing to being more and more technological and explaining and showing this to people is a real challenge. Because health tech innovations can be perceived strange and scary, people are unsure of trusting their health to unknown technologies (Calnan et al. 2005). Modernization has in many cases taken the human aspect off of the equation, which naturally rises questions and hesitation. Examples of this kind of cases are robots performing surgery, use of mobile phones in diagnostics and monitoring, and IT databases containing and storing patient information.

Today, the private sector is throughout the world gaining more and more room in the healthcare market, and this trend will keep going. It is important, to let the modern and innovative health tech companies thrive and be successful in this market too, because they have the means, motives and incentives to improve the world (Lagomarsino et al. 2009). Therefore, it's not enough for the industry to fight trying to tell people to overcome their prejudices towards technology, but to convince them that they're not "big evil corporations trying to take their money from their health" but honest businesses, which are trying to sell products and services to truly help and develop people's life and societies.

In what come to marketing, the attitudes towards the "scary technology" can be changed through persistent marketing, choosing the right means of communication and correct messages (Andersen 2001). This is a key factor for the health tech industry to thrive. The innovations are clearly extremely useful for today and the future, but the attitudes and prejudices block the way for the progress of them. Thus to be precise, the marketing messages sent are crucial to not only to rise revenue, but to change people's prejudices as Andersen (2001) states. If this isn't done, no revenue will be created since people won't buy this kind of products or services.

Health tech companies have a common mission for now: changing the attitude of the markets. It is a considerable obstacle which is standing between the industry and the markets, and dealing with it will be a long process. All of the companies will have to elaborate on this problem, before larger process and bigger revenues will be achieved.

After research, there was none to very little information about the different methods of marketing of highly innovative health tech products for combating concretely its problems with people's prejudices. This study aims to cover that gap. Hence, it aims to provide new views on the marketing world of health care and health tech today and to acknowledge and provide solutions to the customers' attitude problems of it. Its main objective is to bring the marketing theories of health care closer to the industry of health tech and implementing them in a corresponding level. Secondary objectives are:

1. To understand the principles of health care marketing and
2. To explain the common prejudices and attitudes towards health tech

2.2. Framework and research question

The World Health Organization (WHO 2016) describes "Health Technology" as follows: "Health technology refers to the application of organized knowledge and skills in the form of devices, medicines, vaccines, procedures and systems developed to solve a health problem and improve quality of lives." In this thesis (supported by Health Care Business & Technology 2016), the "Health Technology" or "Medical Technology" or "health tech" is referred while talking of any type of advanced medical equipment (for example a wireless heart rate monitor) or service (sensor monitoring for seniors and disabled) or high end technology for medical purposes and organizations from the fields of IT (for example patient databases) and digitalization (monitoring mobile app for diabetics). All new mechanical and digital products describing themselves as "health tech" are part of this. Health tech will include also the biotech-aspect, considering genetics and new, 21st century medicine.

The thesis will be focusing on evaluating the greatest challenges in the prejudices of the health tech industry affecting their growth and how can these challenges be overcome.

When talking about the “markets” or “customers”, all patients, medical staff and ordinary people are taken into account. If discussed of only one customer segment, it will be clearly typed.

The studies of “Health Technology Acceptance” and “Technology Acceptance” are treated as central aspects of the thesis. The “technology acceptance” is a way which naturally eradicates prejudices and negative attitudes from the users being discussed. If one “accepts” the technology, he/she is characterized as having no prejudices and/or positive or neutral attitude towards it.

While talking about the prejudices and negative attitudes in the 4th chapter, the focus will be on the negative aspects only. Naturally, there is the other side of the coin too for the positive sides, but these aspects will be put to use and referred to while discussing the implementation of marketing strategies.

As there are health tech companies of many different sizes and resources, not all different marketing strategies are able to function with all. The monetary question will not be discussed in this study. The different strategies are treated as commonly available and the objective is to make them implementable to all health tech providers, but with different scale depending on the company’s resources.

The thesis will not focus on explaining all different types of marketing there is, the point being the bigger picture. Thus there will be no discussion for example of “digital marketing in Facebook” or “Successful TV-ads”. Tools and concrete, detailed models of marketing strategies will be introduced as examples when starting to map the integration of different methods of marketing to change people prejudices and attitudes.

At the end, the focus will be on the most effective channels to be worked on and the most effective messages to be sent via marketing.

For the health tech industry being fairly new and for the personality of technology itself, the articles and sources used to refer try to be the newest possibly available.

The study can be summarized to answer this research question:

How can health tech companies change common prejudices and attitudes of customers with the means of marketing?

3. Marketing in the health care industry

3.1. Perspectives and principles

The marketing of medicine, health products or anything at all which is linked to personal health has always been difficult and challenging. Correspondingly the health care market is unique in the mind of the normal human being, containing very private, ethical and emotional aspects (Rahman et al. 2016). This has emerged a totally new area of marketing, which focuses on pulling the emotional and personal strings from the human mind and using them to support the marketing of health care (Kemp et al. 2015).

This chapter will discuss the main components on which health care marketing is based. They are classical components of any kind of marketing, but above all in the health care field they're critical for the advertising and marketing efforts to succeed efficiently. These are the emotional aspect, spread of word of mouth, legislation, hiding the risks, understandable descriptions and lobbying.

The top aspects which the public sees as most important while being exposed to health care marketing are trust, referrals and testimonials, and perceived quality of care (Kemp et al. 2015, Randolph & Viswanath 2004, Carmichael 2008). Since the common, non-medically trained people know very little about medicine, this is a natural way of choosing different medical products. People trust doctors and they're often the only source which people accept in questions which come to their health (Peluchette et al. 2016). Today however, the internet has taken a more significant role in self-diagnostics and product overviews, but can often be seen rather questionable by the public (Fox and Duggan 2013). Also, while talking about the quality of care, the same point of the common people knowing little about medicine is relevant. People judge themselves medically by how they're subjectively feeling, not with objective tests like blood tests and magnetic imaging.

The emotional aspect is probably the most effective aspect of health care marketing (Kemp et al. 2015, Rahman et al. 2016). The fear of losing one's health or even life, is naturally terrifying, and people are willing to try everything to save their or their loved one's life. This is

why a vast amount of medicine companies use emotional appeals and hope in their marketing and advertisement. For example, a study made by Vater et al. (see Kemp et al. 2015) in 2014 found that from 409 health care advertisements 85 percent used emotional appeals in their marketing campaigns.

Another typical aspect from the area of health care marketing is the aim to spread word of mouth. This means that the advertising and communication is not only directed towards the patient (users) of the medicine, but to their relatives and close persons in general (family, doctors, friends), which are to support the user in their moment of need and to spread word of mouth of specific products and services (Kitapci et al. 2014). As in conventional marketing, word of mouth is an effective way of marketing and thus health care companies tend to market not only to the “patient”, but the people surrounding him/her for them to deliver the message (Carl 2006).

Alongside of the marketing of health care being challenging in a subjective level, there is also the aspect of legislation. In many countries (including Finland), the advertising and marketing actions especially for prescription drugs directly to customers is extremely tight (Meredith et al. 2002). Thus, the health care industry faces the challenge, of not forcing advertising for only ordinary customers, but to medical staff and institutions too.

In health care marketing, a typical habit exists of undermining the possible risks of the products, if possible. In the marketing world, this is natural, since nobody wants to denigrate the image of a product or service. But, although natural, in the medical world this is a true problem and many examples have been where not telling the risks have resulted in negative effects or side effects on the clients (Van Zee 2009). Thus different means of decreasing this issue have emerged (Moore and Fraser 2006), the health care marketers keep searching for loopholes to avoid telling all of the necessary facts. All in all, there is the problem of tightening legislation too much with e.g. mandatory testing and thus choking new innovations from emerging due to lack of recourses to execute the tests.

According to Mackert et al. (2015), there is the problem of medical companies fighting for saying what they need in a simple and customer friendly way. Because of legislation, the facts of the products have to be said in clinical jargon, which only trained medical professionals can understand. This has led to people not understanding what the products really

do and causing problems to themselves and on the other hand, the companies suffer for people not buying their products because they can't be sure to fully understand them.

A very used and traditional way to market towards b2b entities is lobbying, especially in the US (Madden 2012, Meredith et al. 2002). The b2b side of health care marketing is not only significant on drugs, but in all health products. For example, machinery and hospital equipment are marketed solemnly to this sector, since they need professional (medical staff) to operate them. Also, since people trust their doctors, it is very efficient if a physician recommend his/her patient a product or medicine. A vast amount of recourse in the US is being spent of professional salesman trying to get doctors and staff to speak for their product. Also, they market the prescription drugs, for doctors to prescribe the drugs of the companies they salesman are representing.

3.2. Concrete usage

In this chapter the concrete usages of health care marketing communications are discussed trough theories based on the work of Purcarea et al. (2015) and Boboccea et al. (2016), backed up by other studies mentioned later on. These theories give a modern view to the communication used by health care providers and thus are usable as a good base in this paper.

The focus of this chapter is to create a coherent structure of what kind of messages and through which channels these messages can be sent. At the end, a wrap up is made in the form of the theory of Gheorghe (2012, see Purcarea 2015) of The Integrated Online Marketing Communication Mix in Health Care Services, to illustrate the communication strategy used by health care companies in the modern world.

3.2.1. Functions of health care marketing communications

Today, the marketing of health products is much more than traditional TV-ads and printed media because of the virality of the internet. The traditional ways of marketing have changed to new theories of social and internet advertising and marketing.

According to Lovelock and Wirtz (2007) adapted by Purcarea et al. (2015), and Boboccea et al. (2016), the health care marketing communications have several, commonly acknowledged traditional functions. They vary from informing the concrete information of products to launching timely advertising campaigns of them. This chapter will furtherly explain these functions illustrated by Purcarea and Boboccea.

The main function of marketing communications is to inform the customers about their products and services, the places where they can obtain these so that customers can know about their existence and to actually tell what the company does (Webster 1992). This function can be obtained by simple means, like billboard ads or TV-commercials.

Second: establish relationship with their future and current customers through specifically tailored messages. In the health care industry, this may be a word of mouth of your own doctor, reminding you to come to the annual check-up or recommending a new medicine. To maintain this function viable, it is important to create a believable message of trust, for the counterparts to keep having interaction with each other's in the future (Wilson 1995).

The third function mentioned by Purcarea et al. is creating a clear message of results and outcomes from treatments and usages of services and products. Since many treatments in the medical world have a certain problem of intangibility, it is important to communicate the concrete results. If the main result is "healing", pictures and recommendations should be applied, as messages imagining the healing process and calmness and distress which comes with them.

The use of metaphors for communicating value for customers is also a key function mentioned. This is an attempt to try "tangibilize" their services benefit through words. For example, slogans and images are an effective way to do this. The point is to create short image or text easy to remember and associate the value of the service or product to it and besides, metaphors in slogans can stick to customers' minds helping they recall (Tynan 1999).

Marketing communications also help the consumers to evaluate different providers. Every marketing departments objective is to create a message which highlight the best aspects of the company. In the health care industry, these factors are for example awards and rewards from scientific institutions and highly skilled personnel.

The Facilitation the usage of products and delivery process of services is an important function too. Just as the staff knows how and what to do, the same information should be communicated to the customers. In health care organization videos and tutorial guides are used to show different procedures to the patients.

Knowing when to advertise is critical. As a function, marketing communications are responsible of creating value at the most beneficial time. As new games and toys emerge for the Christmas market, in the health care industry vaccination advertising works as though. Vaccinations against the flu are offered from many organizations in autumn.

Since health care is all about trust and interaction, staff is a critical asset in terms of marketing also as a function. Doctor's meetings and over-the-counter encounters are fertile land to communicate new health care products to customers in this high-contact service area.

3.2.2. Channels of communicating and categories of marketing messages

According to Boboceă's et al. (2016) theory of health care communication channels, the main channels which communication is done are through common advertising (TV-, radio-, printed-, magazine-ads etc.), sales force (the salesman promoting the organization to different stakeholders, public relations (direct contacts made in and themed by congresses, interviews, press releases etc.), the internet (social media relations and marketing campaigns, online profiles, forums etc.), fairs and exhibitions, word-of-mouth and service presence (logo, slogan, image, ambience, décor, uniforms, vehicles etc.).

Boboceă's theory of communication channels above has served as a classical model for channels of health care marketing and is used widely as it is. However, in addition to have the channels from which to send messages, Purcarea et al. (2015) identify a model created by Duncan and Moriarty (1997, see Purcarea et al. 2015): Health Care Integrated Marketing Communications, which explains what are the different types of messages you can send using these channels. This model takes into account the very viral 3rd party communication, or unplanned messages, which the organization sending the messages cannot control.

The four different message types or categories according to Duncan and Moriarty (1997, see Purcarea et al. 2015) are: Planned messages, services messages, the unplanned messages and the absence of communication.

Planned messages consist of all those messages a company chooses strategically to send. These are messages discussed beforehand and targeted to specific audiences. These kind of messages are sent through common advertising, sales force and public relations actions, and fairs and exhibitions. They can also be sent through online marketing means in the internet.

Service messages are messages the organization idly sends from their services or products or as Bobocea et al. defined: service presence. They consist of the aspects and feelings the products and services send to the customers. The image which a slogan gives or the first impression of the equipment used in a medical factory, whether they're old or new, are service messages.

The unplanned messages are very important messages which are not directly sent by the organization. Traditional word-of-mouth and today's internet communication (forums and boards), which cannot be influenced by the company are examples of this. Unplanned messages are communicated by the customers themselves, while discussing the quality of the product or service. These are usually sent after the service and is seen to be the most important way of communication in the benefit or demise of a health care organization.

The absence of communication is not sending a message which is also a way of communication. This takes place when a message is requested or needed but not provided. As in the health care business, this could be an example of a doctor being accused of bad conduct and the choice of the organization to ignore these accusations.

3.2.3. Integrated Marketing Communications

After understanding the different types of messages and the different channels through which these messages can be sent, the implementation of Integrated Marketing Communications (IMC) can be discussed. This consists of defining the channels through which the messages and thus marketing is sent, creating the critical communication strategy (Purcarea et al. 2015).

The most important factor is to take into account in unplanned messages, which particularly in the health care industry, define mostly the choice of service provider (Tu et al. 2008). This area is often neglected in the industry, because it's not easy to monitor and control and often lack of marketing professionals to have the time and knowledge to analyze it thoroughly. It's been clearly stated by Gregor and Gotwald (2013), that health care institutions are not well prepared to use modern marketing instruments, such as social media and mobile marketing.

Having the internet and easy access to all kinds of data available for the customer, Purcaera et al. (2015) have created a modern marketing mix model which is widely used in the health care industry:

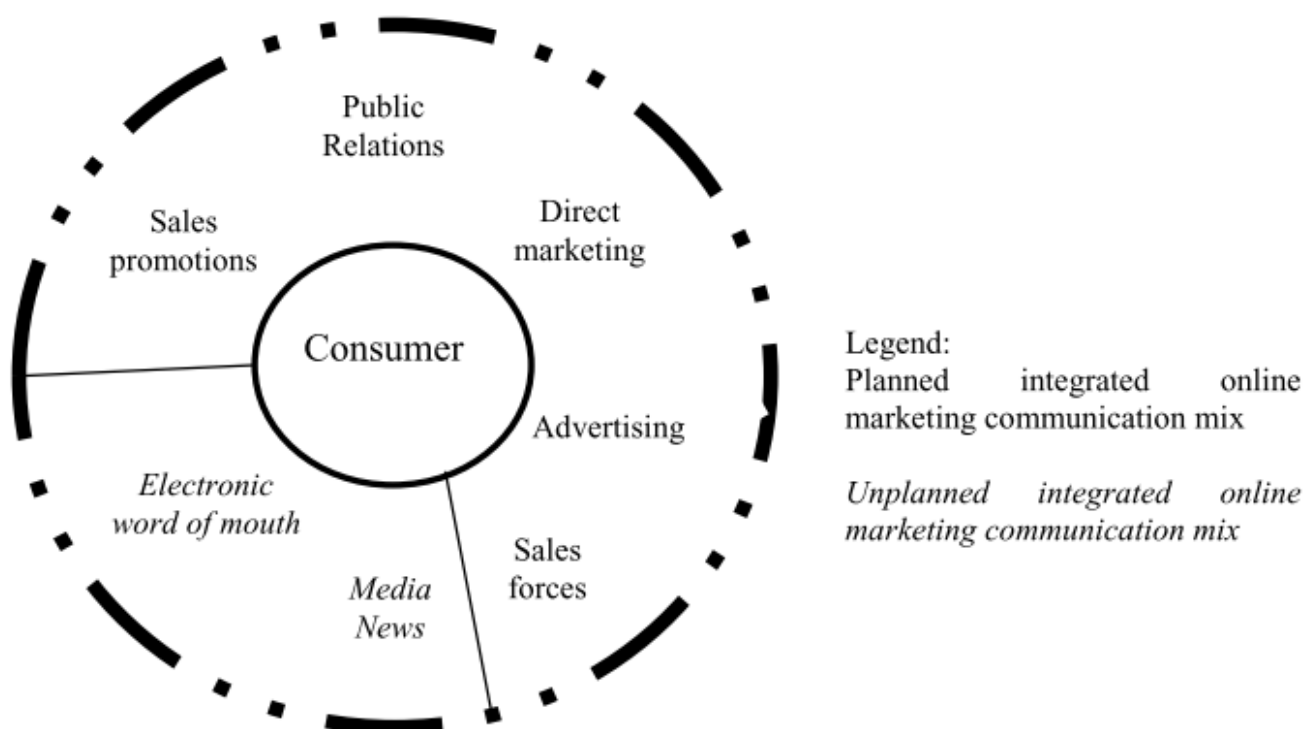


Image 1: The Integrated Online Marketing Communication Mix in Health Care Services (Source Gheorghe (2012, see Purcarea et al.2015)

Although the model is not used in every organization in the world, it is a solid base which can be said to reflect to modern model of marketing mix in the health care industry. The diagram illustrates the position of all the channels affecting the customer and the importance of one, planned, specified and concordant message to be sent by all the channels where possible, and in the other hand acknowledging the existence of “Electronic word of mouth” and “Media news”, which cannot be affected by the organization itself. The diagram is operational both offline and online and it is tied to the organizations strategic plan according to the marketing objectives. The *Electronic word of mouth* and *Media News* are translated respectively into offline worlds meaning traditional word of mouth and conventional news, being equally important in the unplanned communications.

4. Attitudes towards health tech innovations

There are many factors which create prejudices towards health tech. Many different studies have investigated this phenomenon and all kinds of different results have emerged, varying for the fear of being insecure with technology (Holden and Karsh 2010) to the age-factor of old people being more cautious with technology (Czaja et al. 2006) and the education and socioeconomically status of the user (Gaylin et al. 2011). No one single factor has emerged above others why people have prejudices towards this technology. Although not all people do have negative attitudes towards health tech, it's still a very significant percentage of the whole market (Calnan et al. 2005). The studies have been conducted throughout the world, and it can be said that they apply to the general public in this particular market. As stated by Groeneveld et al. (2005), there's none to very little racial differences in the attitudes towards health tech and innovations.

In the next chapters, the top three aspects of having prejudices and negative attitudes towards health technology will be discussed and a brief introduction to the commonly used Technology Acceptance Model will be presented. These aspects are selected for being the top most discussed aspects of having prejudices and lack of acceptance of health technology in academic articles and journals. The aspects discussed are Self-efficacy, Age, and Low-income and low-education.

4.1. Technology Acceptance Model (TAM)

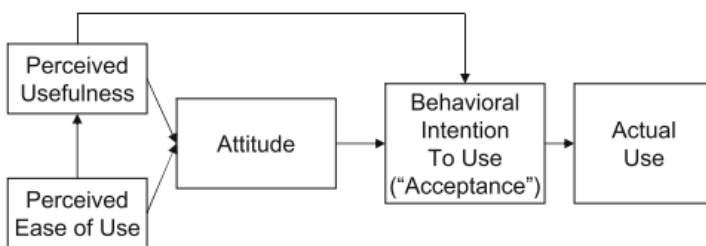
This paper presents a very brief introduction of the widely used Technology Acceptance Model, to help understand the main tool used throughout the world to analyze people's attitude of using new technologies.

TAM was originally developed as a tool to analyze the acceptance of technology in general (Venkatesh and Davis 2000) and was adapted to the health tech industry by Hu et al. in 1999 in a study of physicians' acceptance of "telemedicine", referring to health IT or health technology in the modern language use. Now, the TAM and its new evolved forms as TAM2,

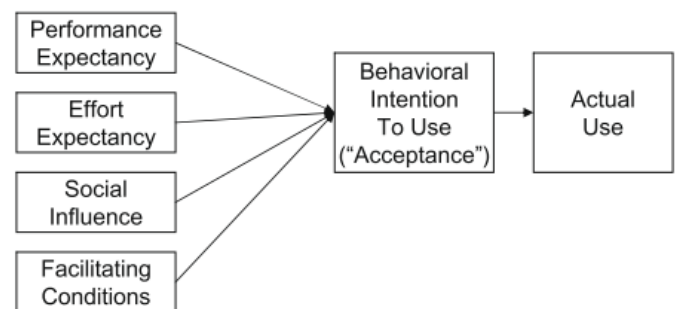
UTAUT and TPB are one of the most used models to analyze the usage of new technology in the world (Marangunić and Granić 2015).

The TAM is originally based on two factors: Perceived usefulness and Perceived ease-of-use. Both of these subjective attitudes affect to the attitude the user has towards the new technology. Correspondingly, these three factors combined eventually decide whether the user accepts or not the new technology, for example a new Electronic Health Record -system.

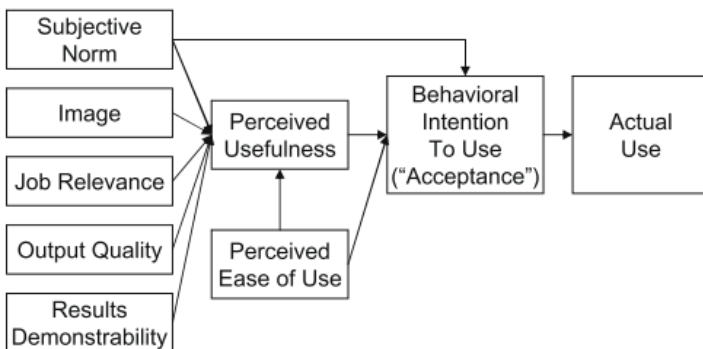
(a) Technology Acceptance Model (TAM)



(c) Unified Theory of Acceptance and Use of Technology (UTAUT)



(b) Technology Acceptance Model 2 (TAM2)



(d) Theory of Planned Behavior (TPB)

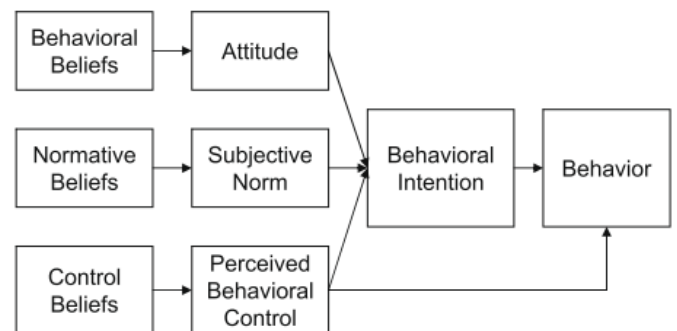


image 2: Illustrations of (a) the Technology Acceptance Model (TAM), and related theories, including (b) TAM2, (c) the Unified Theory of Acceptance and Use of Technology (UTAUT), and (d) the Theory of Planned Behavior (TPB) (Source: Holden et al. 2010.)

According to Holden and Karsh (2010) The newer TAM models illustrated above work similarly as the original. They all show which factors in particular define the attitude of the user and ultimately the choice whether to use the new technology or not. Fred Davis, who first introduced TAM to the world (Marangunić and Granić 2015), upgraded himself his original TAM with the new TAM2 to take into account the factors influencing the perceived

usefulness. Then, a newer model still emerged from an effort to unify the IT acceptance and created UTAUT, which is designed to be more holistic than its precedent technology acceptance models. To conclude, the last model illustrated, TPB, was created having strongly in mind the psychological aspects of human behaviour and decision making (Ajzen 1991).

The original TAM and the latter three variations are not the only ones modeling the technology acceptance of human beings or the attitudes of them, but they're to most commonly used in the academic world (Holden and Karsh 2010). In the modern world, the use of TAM does not refer only to the original Technology Acceptance Model, but to it and all the other emerged variations following the same principle. Furthermore, while talking of TAM in this paper, it will be referred on the TAM theoretical principle and not the first original model itself.

4.2. Self-efficacy

Self-efficacy is a concept introduced by Albert Bandura in the late 1970's and has since been a cornerstone in defining one's perception of his own capabilities in psychology and thus in many other fields, like marketing (Rahman et al. 2016). According to Rahman, self-efficacy refers to "individuals' assessments of their effectiveness or competency to perform a specific behaviour successfully."

An aspect which emerged from various studies of technology acceptance (e.g., Rahman et al. 2016, Holden and Karsh 2010, Kijasanayotin et al. 2009), is that people are afraid to use and adopt new medical technologies if they're unfamiliar with its usage and lack the self-efficacy to try. Especially studies with electronic health record (EHR) adaptation have shown, that the low self-efficacy of the medical staff has led to underuse, resistance, work-arounds and even sabotage (Holden and Karsh 2010, Lapointe and Rivard 2006, Lawler et al. 1996).

Using the TAM model, researchers were able to identify the factors which medical staff took as critical for their acceptance of technology related to self-efficacy (Holden and Karsh 2010). If the technology made people answer "yes" to questions as follows, the technology was much likier to successfully adapt. These were for example:

Perceived usefulness: Does the technology make my job easier? Does it make my performance better and faster?

Perceived ease of use: Is the technology easy to use? Can I learn to use it quickly?

Social influence: Do my colleagues think I should use the technology?

Facilitating conditions: Do I have the necessary resources to use the technology?

Similar results of self-efficacy being a major attribute defining the negative attitudes and lack of acceptance of these kind of technologies have been made in the recent years, giving supportive results (Rahman et al. 2016, Chang et al. 2015, Ketikidis et al. 2012, Lapointe and Rivard 2006) especially when conducted in medical institutions and to medical personnel.

To summarize, according to these studies it can be clearly said, that the lack of self-efficacy and an individual's unfamiliarity towards an unknown new technology creates prejudices of the technology being e.g. un-needed and possibly even harmful. Furthermore, they show that the lack of self-efficacy is one of the major reasons why prejudices and negative attitudes exist in the health tech industry (Rahman et al 2016).

4.3. Age

Self-efficacy is not the only factor emerged in the research of technology acceptance and prejudices of health tech. Another very clearly seen factor on having negative attitudes towards health tech by default was old age (Broadbent et al. 2012, Holden and Karsh 2010, Czaja 2006). It has to be understood, that it's not only the health tech which causes problems with the older people, but the cautiousness to technology in general (e.g. Mitzner et al 2010; Sharit et al. 2003, see Czaja et al. 2006).

Since many countries are facing a growing percentage of elderly people compared to the younger generations, more and more technological products are being created to help and ease the shortage of health-care professionals to give the adequate care (Miskelly 2001, Broadbent et al. 2012). But, there has to be a clear understanding from the providers of this kind of technology, why the elderly have difficulties with it or choose not to adopt it,

otherwise the implementation of health tech will continue to be a failure in this sector (Czaja 2006).

The lack of being able to use technology, such as computers or internet, as fluently than younger generations puts older people to a disadvantage and can cause frustration and anger, affecting their self-efficacy. The sometimes difficultly understandable descriptions and instructions of health technology (Mackert 2015) is a common factor which can cause frustration and giving up the process of learning new technology usage (Broadbent et al. 2012).

The different health technologies offered and targeted to elderly people usually vary from health care robots to monitoring services and door sensors to bed alerts (Miskelly 2001). These may even need the usage of computer, internet or mobile by the elderly themselves. Generally, the user interfaces are made for health care staff to use and only little for the elderly “patient” to learn or do. Many times, the elderly experience embarrassment and lack of knowledge when these kind of technology are put to use for them (Broadbent 2012) and might experience them as a violation to their privacy and feel needy (Miskelly 2001).

4.4 Low-income and Low-education groups

The third most discussed factor of having prejudices and attitudes towards health technology are the low-income and low-education groups. These individuals are noted to be less accepting towards new health care technologies and technology itself.

Many studies (e.g. Fang et al. 2016, Ancker et al. 2013, Gaylin et al. 2011, Calnan et al. 2005) describe a positive correlation of low-income and low-education individuals being less accepting to the use of new health technology. However, very little studies have been made of “why” these groups are less willing to accept technology. The lack of research is persistent not only in health technology, but in technology studies in general.

Possible and natural explanations why lowly educated people have these prejudices and attitudes towards technology are for example the lesser level of common knowledge, “how-to-knowledge” and lesser ability to learn (Abbasi et al. 2015), which affects the individuals

self-efficacy. As for low-income individuals, a natural conclusion of the lack of acceptance is the lack of information, experience and possibilities to acquire new technology, since health technology and technology in general tends to be fairly expensive. Besides, it should be noted, that a moderate positive correlation between income and education does exist (Wylie et al. 2015, Feiring et al. 2015).

5. Marketing to change prejudices of the health tech industry

Now that we've gone through the typical aspects of health care marketing and the common attitudes and prejudices which emerge from different groups and situations we can focus on resolving the problems of the negative attitudes towards health technology through means of marketing. As many studies show (e.g. Gaylin et al. 2011, Gabriel et al. 2010, Herzlinger 2006), the markets are pouring with new health care innovations, which for some reason fail to succeed and billions of investor dollars are lost. One of the concrete reason to this is the lack of good marketing messages by the industry (Gregor and Gotwald 2013).

5.1. Channels

In the process of searching, reading and analysing literature and articles, a clear pattern emerged of the top three different channels of effective messaging in the health care segments. They were word-of-mouth, the internet and sales force (Boboccea et al. 2016, Purcarea et al. 2015, Kemp et al. 2015, Shih et al. 2013, Hesse et al. 2005). These three means we're the ones which proved most effective to getting through to customers and making them take action and they will be treated as the best channels to work on in this paper. As discussed in chapter three, people have most trust in referrals from their friends and family and professional opinions (Tu and Lauer 2008, Hesse et al. 2005). In the health care industry, these professionals are usually personal doctors and medical staff.

The internet has become the primary source to people to look for health information according to Hesse et al. in 2005. Since then, it's proven that this trend hasn't changed, but strengthened to this day (Bogg and Vo 2014, Fox and Duggan 2013). This is why companies and organizations in the health tech industry have to focus on sending the right messages effectively through the world wide web and be sure that information and details of them exists in this media. In addition, the internet messages have to be managed in social media too, this being critical for the company to give a strong internet presence, create conversation

and marketing campaigns, and monitor discussion of their products and image (Laroche et al. 2013).

The sales force has been a strong channel of communication of health care products and services and still is, due to the fact of health product and service information being often communicated first to the medical staff and professionals, and then through them to the general public (Scott and Stokes 2013). Another reason to the importance of sales force, is that the health care marketing and communication is often directed directly to medical institutions as a b2b product or service, for instance in the case of marketing new machinery to hospitals.

Since the messages sent by word-of-mouth are unplanned messages, there is no way an organization can directly send them. But, by using the other two channels, it can be influenced effectively by sending the planned messages successfully and leaving a good impression on the perceived quality of care.

5.2. What to communicate?

The three most important features which emerged from studies to communicate in a health care company's messaging and marketing were: positive emotions (like trust and care from the organization), referrals and testimonies (from medical professionals and personally known people), and the perceived quality of care (theory based campaigns) (Kemp et al. 2015, Carmichael 2008, Randolph & Viswanath 2004,).

First, a clear and effective marketing strategy has to be created to send the messages intended in a consistent way in all channels (Boboccea et al. 2016). The messages sent should contain at least the features mentioned in the previous paragraph. A concrete example of this is to use a story of the success of the product (Carmichael 2008) backed up by testimonial of medical-professionals. Since people often tend to have a sceptic attitude towards health care marketing (Kemp 2015) an aim of this message could be to look the less possible as an advertisement. Today, a concrete way of doing this is to e.g. buy article space from magazines and writing your ad as an article, discussing the product.

If the technology innovation is a cure for a specific illness or condition, it should state and image the healing process. A good and widely used way to do this is mentioning “hope” and “sympathy”. Since many people especially with terminal or very difficult illnesses try to seek options in fear of worst case scenarios, hope is often the only thing left, and if this is provided for them in a trustworthy and empathetic way, the chances are that they will at least try the product or service marketed to them (Kemp 2015).

Another thing to be kept in mind while composing a marketing message of new health tech, is to make it as clear as possible. As discussed, people are often confused and lack of knowledge while new health tech is presented to them (Holden et al. 2010) and the information can be very unclear to the non-educated in medicine (Mackert et al. 2015). The crucial part is, to strip the message of the unnecessary technological jargon and focus on speaking a simple, understandable language of the pros and benefits the innovation will bring to the customer as far as its possible by legislation. The common marketing language can be used to explain why the product is superior to any other one on the market. Another thing to point out to the customer, is the need to feel no fear of new technology and innovations and back this up by previous user experiences (Carmichael 2008).

If the message is clear, backed up by professionals and concrete testimonies by ordinary users, and it shows clearly the positive outcomes of using the product or service, an actual channel has to be chosen next. Since we already defined two of the three best channels which an organization can influence being the internet and sales force, these will be the channels discussed in this paper. One should note, that these are not meant to be the only channels used in a coherent marketing strategy, but they have been chosen to discussion for being the most effective ones.

While working with the internet, there is an endless amount of possibilities to send a message. The important thing in this media, is to have an in-line message to be sent through all the company’s internet presence. According to Shih et al. (2013), internet marketing should be done by a strong Search Engine Optimization (SEO) and Social Media Networking or Social Networking Sites (SNS). The importance of these areas of the internet to change prejudices and create positive attitudes is high, since the majority of people use search engines as Google and Yahoo to seek information of diagnostics, health products and services (Fox and

Duggan 2013). With a strong SEO and SNS, an organization ensures that its web site and social media accounts will be in the top position while potential customers seek discussions and information of its products and services. Moreover, this leads people to the company's official pages and channels of communications, which should be designed to give the precise and legitimate information to the customers. Blogs launched by companies written by medical personnel are good examples of this to help a company make itself more transparent (Grajales 2014). This also helps the health tech company monitor the discussion of them taking place and gives the possibility to communicate directly to the customers through SNS, respectively making a more trusted image. Without a visible online presence of itself, its services and products, a company gives a bad and untrustworthy image, which is apt to cause prejudices and negative attitudes (Grajales et al. 2014).

What comes to sales force, an effective and balanced strategy has to be created (Zoltners et al. 2012). This includes giving the right awards and motivation to the people doing this, since if the inner marketing to the sales person fails, it is probable that the outer marketing will fail too since the sales man has no motivation to sell the product. Also, a very important thing to have in mind before launching the sales force, is to target the right stakeholders. The point is, to segment the product being sold and acting up. The health tech innovations should naturally be targeted by their sales force to health-care professionals in different institutions, as hospitals and care facilities, like nursing homes. As stated before, doctors and medical professionals are trusted by the public, and if they recommend the product to their patients, a good step has been made. If the innovations are targeted to the institutions and professionals themselves, it has to be taken into account that the professionals are often resistant to this kind of channel of messaging (Scott and Stokes 2013). The same study showed however, that in this case the main point to focus is stating that offered product being essentially superior, cheaper and easier to use than the predecessor, or rising up the fact of the innovativeness and uniqueness of it. Also, if the sale is being offered by another doctor or medical professional, the chances of the marketing efforts being successful rise.

If the sales force succeeds, the most effective way of communicating health care companies' messages is achieved, since word-of-mouth will pass on from medical professionals. These messages can be possibly used by means of planned communications also, interviewing these medical personnel in companies' SNS or blogs for example. Another way of promoting

positive word-of-mouth is asking the patients and users of health tech products and/or services directly to write about their perceived quality of care. These can be used not only in marketing to clear prejudices and negative attitudes, but to constantly improve the organizations service and collect data.

6. Conclusions

6.1. Contribution

The aim of this thesis was to bring health care marketing theories closer to the health tech industry and implement them on a corresponding level to help health tech companies to face prejudices and negative attitudes towards their products and services. The main theories used to mirror health technology marketing to the health care industry were Purcarea et al's. study of the online marketing mix for health care services and Boboccea et al's. study of external marketing communications in health care services. The prejudices and attitudes were discussed on base of different studies, creating a coherent base of the main problems of customer's prejudices towards health technology, reinforcing them with studies about technology acceptance in general. The studies based on Technology Acceptance Model (TAM) were used to help pinpoint and understand the reasons of the existence of different prejudices. The arguments made in this thesis were based on the newest possible studies of health technology, to make the study as timely as possible, keeping in mind the constant evolution and development of health technology and technology in general.

While many studies existed on marketing health care and acceptance of technology, there was very little discussion about the main phenomena which creates prejudices towards health technology specifically, and even less of concrete ways of how to change them through means of health care marketing and communication. This thesis offers basic facts to contribute in the development of the health tech industry and discusses the messages and channels to use in a strategically efficient way to combat the ordinary prejudices and attitudes modern people do have at the moment towards health technology.

In practicality, this study provides a strong base to solutions in the problem of prejudices and negative attitudes the health tech industry faces. It gives concrete examples based on studied theories of how to create effective marketing messages for the industry through different and efficient channels and highlights the main problems for the existence of these kind of attitudes. This paper can be used e.g. in future research or it can serve as a concrete base for companies building a marketing strategy. Furthermore, this study can be read to help

one understand the personality of health care marketing and the common prejudices the health tech industry faces.

6.2. Limitations and Suggestions for future research

Although the study stands on a strong theoretical base, there are a lot of limitations in it.

First of all, it has to be kept in mind that this paper discusses the problem on a very superficial level, taking a lot of the theories and conclusions of previous studies for granted. No empirical research has been made, which is critical while analysing this kind of problem. Due to the limited articles discussing this specific issue, a lot of assumptions had to be made deriving from previous studies, without proving them in a practical research.

Second, this paper serves only as a basic study of the problem of health technology in general. This thesis cannot rule out the possibility of different health tech products and services behaving differently and creating different attitudes and/or prejudices. As Calnan et al. (2005) state, there are different levels of prejudices and acceptance towards different products and services of this industry, comparing for example the subject of human cloning vs. hip replacement.

Third, this study does not take into account the prejudices which different cultures have. It should be noted, that technology and health care and the attitude towards both is different in different cultural environments.

Furthermore, this study is only practical in this particular point of time. As stated before, technology and humanity keeps evolving and prejudices and attitudes change naturally over the years. For instance, while discussing the aspect of age being a factor which usually creates prejudices towards technology, it is logical, that when the younger generations which have been raised hand in hand with technology reach older ages, their attitude towards modern and future technology will be different.

Lastly, a few more limitations can be named which this study does have. It does not discuss for example: the nature of different health care policies of the private and public sectors in-

fluencing the attitude towards health technology, the fear of users losing their jobs to advanced technology and the possibility of a radical change in humankind and mass attitude change (like the born of a cure to cancer or an outbreak of a nationwide epidemic).

All in all, this thesis makes an extraordinary base for future research. All of the limitations mentioned above function as new areas to continue this study. A few critical aspects to focus on the future, would be for example the different attitudes different cultures have on behalf of health technology and the different prejudices different health tech products generate, just to name a few.

7. References

- Abbasi, Muhammad Sharif, Ali Tarhini, Mohammed Hassouna, and Farwa Shah. 2015. "Social, Organizational, Demography and Individuals' Technology Acceptance Behaviour: A Conceptual Model." *European Scientific Journal* 11 (9): 39–68. <http://www.eujournal.org/index.php/esj/article/view/5279>.
- Ajzen, Icek. 1991. "The Theory of Planned Behavior." *Organizational Behavior and Human Decision Processes* 50 (2): 179–211. doi:10.1016/0749-5978(91)90020-T.
- Ancker, Jessica S, Michael Silver, Melissa C Miller, and Rainu Kaushal. 2013. "Consumer Experience with and Attitudes toward Health Information Technology: A Nationwide Survey." *Journal of the American Medical Informatics Association : JAMIA* 20 (1): 152–56. doi:10.1136/amiajnl-2012-001062.
- Andersen, Poul Houman. 2001. "Relationship Development and Marketing Communication : An Integrative Model." *Journal of Business & Industrial Marketing Journal of Communication Management* 16 (12): 167–83. <http://dx.doi.org/10.1108/08858620110389786>.
- Benzein, Eva, Cecilia Olin, and Carina Persson. 2015. "'You Put It All Together' - Families' Evaluation of Participating in Family Health Conversations." *Scandinavian Journal of Caring Sciences* 29 (1): 136–44. doi:10.1111/scs.12141.
- Boboceca, L, St Spiridon, L Petrescu, C M Gheorghe, and V L Purcarea. 2016. "The Management of External Marketing Communication Instruments in Health Care Services." *Journal of Medicine & Life* 9 (2): 137–40. <https://liverpool.idm.oclc.org/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=a9h&AN=115738193&site=eds-live&scope=site>.
- Bogg, Tim, and Phuong T. Vo. 2014. "Openness, Neuroticism, Conscientiousness, and Family Health and Aging Concerns Interact in the Prediction of Health-Related Internet Searches in a Representative U.S. Sample." *Frontiers in Psychology* 5 (APR): 1–10. doi:10.3389/fpsyg.2014.00370.
- Broadbent, Elizabeth, Rie Tamagawa, Anna Patience, Brett Knock, Ngaire Kerse, Karen Day, and Bruce A. Macdonald. 2012. "Attitudes towards Health-Care Robots in a Retirement Village." *Australasian Journal on Ageing* 31 (2): 115–20. doi:10.1111/j.1741-6612.2011.00551.x.
- Calnan, Michael, David Montaner, and Rob Horne. 2005. "How Acceptable Are Innovative Health-Care Technologies? A Survey of Public Beliefs and Attitudes in England and Wales." *Social Science and Medicine* 60 (9): 1937–48. doi:10.1016/j.socscimed.2004.08.058.
- Carl, W. J. 2006. "What's All The Buzz about?: Everyday Communication and the Relational Basis of Word-of-Mouth and Buzz Marketing Practices." *Management Communication Quarterly* 19 (4): 601–34. doi:10.1177/0893318905284763.
- Carmichael, Mary. 2008. "When Medicine Meets Marketing ; The Business of Storing Umbilical-Cord Blood Is Growing . Is Salesmanship Outpacing Science ?" *Newsweek*, 1–3.
- Chang, Yung-Zung, Chou-Yuan Ko, Chia-Jen Hsiao, Ruey-Juen Chen, Chen-Wei Yu, Yu-Wen Cheng, Trui-Fen Chang, and Cheng-Min Chao. 2015. "Understanding the Determinants of Implementing Telehealth Systems." *Asian Network for Scientific Information*.

- Czaja, Sara J, Neil Charness, Arthur D Fisk, Christopher Hertzog, Sankaran N Nair, Wendy A Rogers, and Joseph Sharit. 2006. "Factors Predicting the Use of Technology: Findings from the Center for Research and Education on Aging and Technology Enhancement (CREATE)." *Psychology and Aging* 21 (2): 333–52. doi:10.1037/0882-7974.21.2.333.
- Fang, Jia Ying, Ji Lin Li, Zhong Han Li, Duan Min Xu, Chang Chen, Bin Xie, Helen Chen, and William W. Au. 2016. "Attitudes towards Acceptance of an Innovative Home-Based and Remote Sensing Rehabilitation Protocol among Cardiovascular Patients in Shantou, China." *Journal of Geriatric Cardiology* 13 (4): 326–32. doi:10.11909/j.issn.1671-5411.2016.04.006.
- Feiring, Laake, Molden, Cappelen, Haberg, Magnus, Steingrimsdottir, Strand, Stalcrantz, and Trogstad. 2015. "Do Parental Education and Income Matter? A Nationwide Register-Based Study on HPV Vaccine Uptake in the School-Based Immunisation Programme in Norway." *BMJ Open* 5 (5): 1–11. doi:10.1136/bmjopen-2014-006422.
- Fox, Susannah, and M Duggan. 2013. "Health Online 2013." *Health*, 1–55. http://www.pewinternet.org/~media/Files/Reports/PIP_HealthOnline.pdf.
- Freeman, John, and Jerome S Engel. 2007. "Models of Innovation: STARTUPS AND MATURE CORPORATIONS." *California Management Review* 50 (1): 94–119. doi:10.2307/41166418.
- Gabriel I. Barbash, M.D., M.P.H., and Sherry A. Glied, Ph.D. 2010. "New Technology and Health Care Costs — The Case of Robot-Assisted Surgery." *Perspective* 363 (1): 1–3. doi:10.1056/NEJMp1002530.
- Gaylin, Daniel S., Adil Moiduddin, Shamis Mohamoud, Katie Lundeen, and Jennifer A. Kelly. 2011. "Public Attitudes about Health Information Technology, and Its Relationship to Health Care Quality, Costs, and Privacy." *Health Services Research* 46 (3): 920–38. doi:10.1111/j.1475-6773.2010.01233.x.
- Grajales, Francisco Jose, Samuel Sheps, Kendall Ho, Helen Novak-Lauscher, and Gunther Eysenbach. 2014. "Social Media: A Review and Tutorial of Applications in Medicine and Health Care." *Journal of Medical Internet Research* 16 (2). doi:10.2196/jmir.2912.
- Gregor, Bogdan, and Beata Gotwald. 2013. "Potential of Social Media and Mobile Marketing in Marketing Communication Management in Health Care Institutions." *International Journal of Contemporary Management*.
- Groeneveld, Peter W., Seema S. Sonnad, Anee K. Lee, David A. Asch, and Judy E. Shea. 2006. "Racial Differences in Attitudes toward Innovative Medical Technology." *Journal of General Internal Medicine* 21 (6): 559–63. doi:10.1111/j.1525-1497.2006.00453.x.
- Herzlinger, Regina E. 2006. "Why Innovation in Health Care Is so Hard." *Harvard Business Review* 84 (5): 58–66. doi:10.1097/SLA.0b013e3182306182.
- Hesse, Bradford W., David E. Nelson, Gary L. Kreps, Robert T. Croyle, Neeraj K. Arora, Barbara K. Rimer, and Kasisomayajula Viswanath. 2005. "Trust and Sources of Health Information." *Arch Intern Med* 165 (May 2016): 2618–24. doi:10.1001/archinte.165.22.2618.
- Holden, R, and Ben-Tzion Karsh. 2010. "The Technology Acceptance Model: Its Past and Its Future in Health Care." *Journal of Biomedical Informatics* 43 (1). Elsevier Inc.: 159–72. doi:10.1016/j.jbi.2009.07.002.
- Karjalainen, Sari. 2016. "Terveysteknologiasta on tulossa Suomen uusi hitti" Kauppalehti: <http://www.kauppalehti.fi/uutiset/terveysteknologiasta-on-tulossa-suomen-uusi-hitti/v3Dj6PDQ>, (2016), retrieved 13.12.2016

- Kay, Mark J. 1994. "Healthcare Marketing: What Is Salient?" *International Journal of Pharmaceutical and Healthcare Marketing Journal of Management in Medicine* 1 (4): 247–63. <http://dx.doi.org/10.1108/17506120710818256>.
- Kemp, Elyria, Kyeong Sam Min, and Elizabeth Joint. 2015. "Selling Hope: The Role of Affect-Laden Health Care Advertising in Consumer Decision Making." *Journal of Marketing Theory and Practice* 23 (4): 434–54. doi:10.1080/10696679.2015.1049688.
- Ketikidis, P, T Dimitrovski, L Lazuras, and P A Bath. 2012. "Acceptance of Health Information Technology in Health Professionals: An Application of the Revised Technology Acceptance Model." *Health Informatics J* 18 (2): 124–34. doi:10.1177/1460458211435425.
- Kijisanayotin, Boonchai, Supasit Pannarunothai, and Stuart M. Speedie. 2009. "Factors Influencing Health Information Technology Adoption in Thailand's Community Health Centers: Applying the UTAUT Model." *International Journal of Medical Informatics* 78 (6): 404–16. doi:10.1016/j.ijmedinf.2008.12.005.
- Kitapci, Olgun, Ceylan Akdogan, and İbrahim Taylan Dortyol. 2014. "The Impact of Service Quality Dimensions on Patient Satisfaction, Repurchase Intentions and Word-of-Mouth Communication in the Public Healthcare Industry." *Procedia - Social and Behavioral Sciences* 148: 161–69. doi:10.1016/j.sbspro.2014.07.030.
- Lagomarsino, Gina, Stefan Nachuk, and Sapna Singh Kundra. 2009. *Public Stewardship of Private Providers in Mixed Health Systems*. Development.
- Lapointe, Liette, and Suzanne Rivard. 2006. "Getting Physicians to Accept New Information Technology: Insights from Case Studies." *Cmaj* 174 (11): 1573–78. doi:10.1503/cmaj.050281.
- Laroche, Michel, Mohammad Reza Habibi, and Marie Odile Richard. 2013. "To Be or Not to Be in Social Media: How Brand Loyalty Is Affected by Social Media?" *International Journal of Information Management* 33 (1). Elsevier Ltd: 76–82. doi:10.1016/j.ijinfomgt.2012.07.003.
- Lawler, F, J R Cacy, N Viviani, R M Hamm, and S W Cobb. 1996. "Implementation and Termination of a Computerized Medical Information System." *J Fam Pract* 42 (3): 233–36.
- Lehoux, Pascale, S Ephanie Tailliez, Jean-Louis Denis, and Myriam Hivon. 2004. "Redefining Health Technology Assessment in Canada: Diversification of Products and Contextualization of Findings." *International Journal of Technology Assessment in Health Care* 20: 3–325.
- Mackert, M, M Guadagno, and S Champlin. 2015. "Advancing Health Marketing Research and Policy Recommendations by Incorporating Source Perspectives." *Health Marketing Quarterly* 32 (3). 2015: 250–62. doi:10.1080/07359683.2015.1061854.
- Madden, Mary. 2012. "Alienating Evidence Based Medicine vs. Innovative Medical Device Marketing: A Report on the Evidence Debate at a Wounds Conference." *Social Science and Medicine* 74 (12). Elsevier: 2046–52. doi:10.1016/j.socscimed.2012.02.026.
- Marangunić, Nikola, and Andrina Granić. 2015. "Technology Acceptance Model: A Literature Review from 1986 to 2013." *Universal Access in the Information Society* 14 (1): 81–95. doi:10.1007/s10209-014-0348-1.
- Meredith B. Rosenthal, Ph.D., Ernst R. Berndt, Ph.D., Julie M. Donohue, B.A., Richard G. Frank, Ph.D., and Arnold M. Epstein, M.D. 2002. "PROMOTION OF PRESCRIPTION DRUGS TO CONSUMERS." *Neurosurgery* 63 (6): 1035–44. doi:10.1227/01.NEU.0000335789.61773.C5.

- Miskelly, F G. 2001. "Assistive Technology in Elderly Care." *Age and Ageing* 30 (6): 455–58. doi:10.1093/ageing/30.6.455.
- Mitzner, Tracy L., Julie B. Boron, Cara Bailey Fausset, Anne E. Adams, Neil Charness, Sara J. Czaja, Katinka Dijkstra, Arthur D. Fisk, Wendy A. Rogers, and Joseph Sharit. 2010. "Older Adults Talk Technology: Technology Usage and Attitudes." *Computers in Human Behavior*. doi:10.1016/j.chb.2010.06.020.
- Moore, David, and Suzanne Fraser. 2006. "Putting at Risk What We Know: Reflecting on the Drug-Using Subject in Harm Reduction and Its Political Implications." *Social Science and Medicine*. doi:10.1016/j.socscimed.2005.11.067.
- Peluchette, Joy V, Katherine A Karl, and Alberto Coustasse. 2016. "Physicians, Patients, and Facebook: Could You? Would You? Should You?" *Health Marketing Quarterly* 33 (2). Taylor & Francis: 112–26. doi:10.1080/07359683.2016.1166811.
- Purcarea, Victor Lorin, Iuliana-Raluca Gheorghe, and Consuela-Madalina Gheorghe. 2015. "Uncovering the Online Marketing Mix Communication for Health Care Services." *Procedia Economics and Finance* 26 (15). Elsevier B.V.: 1020–25. doi:10.1016/S2212-5671(15)00925-9.
- Rahman, Mohammed Sajedur, Myung Ko, John Warren, and Darrell Carpenter. 2016. "Healthcare Technology Self-Efficacy (HTSE) and Its Influence on Individual Attitude: An Empirical Study." *Computers in Human Behavior* 58: 12–24. doi:10.1016/j.chb.2015.12.016.
- Randolph, Whitney, and K Viswanath. 2004. "Lessons Learned from Public Health Mass Media Campaigns: Marketing Health in a Crowded Media World." *Annual Review of Public Health* 25: 419–37. doi:10.1146/annurev.publhealth.25.101802.123046.
- Scott, Peter, and Peter Stokes. 2013. "Sales and Strategic Marketing Practices in the Pharmaceutical Industry : Doctors as Customers and Their Decisions Annette Elizabeth McIntosh-Scott" 7 (1): 37–51.
- Shih, Bih-Yaw, Chen-Yuan Chen, and Zih-Siang Chen. 2013. "An Empirical Study of an Internet Marketing Strategy for Search Engine Optimization." *Human Factors and Ergonomics in Manufacturing* 16 (1): 61–81. doi:10.1002/hfm.
- Teknologiaateollisuus. 2016 "Terveysteknologia jälleen ennätyslukemiin" Teknologiaateollisuus: <http://teknologiaateollisuus.fi/fi/ajankohtaista/uutiset/terveysteknologia-jalleen-ennatyslukemiin>, retrieved 13.12.2016
- Tjeder, Jannica. 2015. "Terveysteknologia-alalle tulossa yli tuhat uutta työpaikkaa ensi vuonna". Saranen: http://www.saranen.fi/uutiset/terveysteknologia_alalle_tuhat_tyopaikkaa/, retrieved 13.12.2016
- Tu, Ha, and Johanna Lauer. 2008. "Word of Mouth and Physician Referrals Still Drive Health Care Provider Choice." *Center for Studying Health System Change*, no. 13.
- Tynan, C. 1999. "On Metaphors, Marketing and Marriage." *Irish Marketing Review* 12 (1): 17–26.
- Van Zee, Art. 2009. "The Promotion and Marketing of Oxycontin: Commercial Triumph, Public Health Tragedy." *American Journal of Public Health* 99 (2): 221–27. doi:10.2105/AJPH.2007.131714.
- Webster, FE. 1992. "The Changing Role of Marketing in the Corporation." *The Journal of Marketing*. <http://www.jstor.org/stable/10.2307/1251983>.

Venkatesh, V., and Davis. 2000. "A Theoretical Extension of the Technology Acceptance Model: Four Longitudinal Field Studies." *Management Science* 46 (2): 186–204.
doi:10.1287/mnsc.46.2.186.11926.

Wilson, David T. 1995. "An Integrated Model of Buyer-Seller Relationships The Pennsylvania State University ISBM Report Lo-1995 Institute for the Study of Business Markets The Pennsylvania State University" 3004 (814).

World Health Organization. 2016 "Technology, Health", http://www.who.int/topics/technology_medical/en/, retrieved 13.12.2016

Wylie, Blair J, Mrigendra P Singh, Brent A Coull, Ashlinn Quinn, Kojo Yeboah-, Lora Sabin, Davidson H Hamer, et al. 2015. "Family Income, Parental Education and Brain Structure in Children and Adolescents" 34 (3): 355–68. doi:10.3109/10641955.2015.1046604.Association.

Zoltners, Andris, Sinha Prabhakant, and Sally Lorimer. 2012. "Breaking the Sales Force Incentive Addiction: A Balanced Approach to Sales Force Effectiveness." *Journal of Personal Selling & Sales Management*.